CLAIMS

1. A floating structure, especially suitable as, for example, a loading buoy or wellhead platform, comprising a surface element (2) with a substantially rounded cross section in a substantially horizontal plane, columns (3) connecting the surface element (2) to a submerged pontoon element (4) which in a substantially horizontal plane has a substantially rounded external perimeter and a draught in the body of water, mooring devices (5) for securing the structure (1) to the seabed (6) and at least one attachment point (7) for transfer pipelines (8) to a second unit, for example a seabed installation, floating production ship, loading/unloading vessel, etc.,
characterised in that the surface element (2) is arranged floating in the water plane surface (12), with a draught in the body of water, and that the proportion of the volume of the pontoon element (4) divided by the waterline area of the surface element (2) is in the range 4-12 [m^3/m^2], and that the draught of the surface element (2) divided by the draught of the pontoon element (4) is in the range 0.3-0.5 and that the mooring devices have a vertical mooring rigidity for the loading buoy (1) in the range 20-75% of the waterline rigidity for the structure (1).

2. A floating structure according to claim 1,
characterised in that it is a loading buoy comprising attachment point (7) for transfer pipelines (8) from a production/processing/storage unit (9) to the loading buoy (1) and mooring and transfer devices (10) for transferring fluid from the loading buoy (1) to a loading/unloading vessel (11) and the proportion of the volume of the pontoon element (4) divided by the waterline area of the surface element (2) is in the range 4-7 [m^3/m^2] and preferably approximately 6, and the draught of the surface element (2) divided by the draught of the pontoon element (4) is in the range 0.31-0.43 and where the vertical mooring rigidity for the loading buoy (1) is over 50% of the water plane rigidity for the structure.

3. A floating structure according to claim 2,
characterised in that the transfer pipeline (8, 10) from the loading buoy to the production/processing/storage unit and/or the loading/unloading unit extends as catenaries from the loading buoy (1).

4. A floating structure according to claim 2 or 3,
characterised in that the production/processing/storage unit (9) is composed of a second floating unit.

5. A floating structure according to one of the claims 2-4,
characterised in that the surface unit (2) comprises a rotatable deck element (13) for varying orientation of mooring and transfer devices (10) for transfer of fluid.

6. A floating structure according to claim 1,
characterised in that it is in the form of a wellhead platform comprising

attachment and wellhead arrangements for at least one rigid substantially vertical riser extending from a well and at least one attachment point for a transfer pipeline from the wellhead platform to a second unit, for example a loading buoy, storage unit or other unit, where the proportion of the volume of the pontoon element (4) divided by the waterline area of the surface element (2) is in the range 6-12 [m^3/m^2], preferably 10-12 [m^3/m^2], and the draught of the surface element (2) divided by the draught of the pontoon element (4) is in the range 0.4-0.5 and where the vertical mooring rigidity for the loading buoy (1) is in the range 20-50% of the water plane rigidity for the structure.

7. A floating structure according to claim 6, characterised in that it comprises at least some processing equipment.

8. A floating structure according to one of the above-mentioned claims, characterised in that the columns (3) exert little influence on the structure's pattern of movement, being composed of either trusswork, completely or partly closed elements, for example cylindrical with a small average diameter, and/or a combination thereof.

9. A floating structure according to one of the above-mentioned claims, characterised in that the columns (3) at least partly form buoyancy elements.

10. A floating structure according to one of the above-mentioned claims, characterised in that the surface element (2) has a substantially cylindrical shape or alternatively an annular shape with a centre axis substantially vertically oriented.

11. A floating structure according to one of the above-mentioned claims, characterised in that the pontoon element (4) is composed of an octagonal annular pontoon with an outer average diameter.

12. A floating structure according to claims 2, 10 and 11, characterised in that the proportion between a diameter of the surface element (2) divided by the average diameter of the annular pontoon (4) is in the range 0.7.

13. A floating structure according to one of the above-mentioned claims, characterised in that the surface element (2) has a proportion between draught divided by total height approximately equal to 0.75.